Attachment

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ATTACHMENT 9

Request No. 9:

Provide a copy of all Operation and Maintenance Plans required by the National Emission Standards for Hazardous Air Pollutants, Subpart FFFFF for Integrated Iron and Steel at 40 C.F.R. § 63.7800. Provide a copy of each plan that was in effect on May 14, 2007, and provide the date that each previous and subsequent final version of each plan was generated.

U. S. Steel Response:

Attached are four Operating and Maintenance Plans required by the National Emission Standards for Hazardous Air Pollutants, Subpart FFFFF for Integrated Iron and Steel at 40 C.F.R. 63.7800 and were in effect on May 14, 2007. Each Operating and Maintenance Plan included are the original versions, there has not been any modifications since implementation on May 22, 2006.

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Appendices

Table 4.0-1: U.S. Steel – Gary Works, Continuous Compliance Plan (CCP) for Blast Furnace Operations, Inspection Program for No. 14 Blast Furnace Casthouse Baghouse

- Blast furnace casthouse particulate emission capture systems
- BOPF secondary particulate emission capture systems
- BOPF venturi scrubber primary particulate emission control systems
- BOPF electrostatic precipitator primary particulate emission control systems

* For purposes of this plan, "emission capture system" includes emission capture hoods, ductwork, dampers and fans important to the efficient collection and transport of particulate emissions to a particulate emission control device. The particulate emission control device is not part of the particulate emission capture system.

The Operations and Maintenance Plan for the No. 14 Blast Furnace capture system and baghouse is included in this document.

1.3(b) Site-Specific Monitoring Plan

40 CFR 63.7831(a) requires that a Site-Specific Monitoring Plan be developed and implemented for each Continuous Parametric Monitoring System (CPMS) required in 40 CFR 63.7830. Therefore, each CPMS associated with each particulate emission capture system and each particulate emission control device required to have an Operation and Maintenance Plan, listed in 1.3(a) above, is also required to have a Site-Specific Monitoring Plan.

The Site-Specific Monitoring Plan is not included in this document. It is included in a separate document.

1.3(c) Startup, Shutdown and Malfunction Plans

40 CFR 63.7810(c) requires that a written Startup, Shutdown and Malfunction Plan be developed and implemented according to the requirements of 40 CFR 63.6(e)(3), which states in part:

> *"...The owner or operator of an affected source must develop and implement a written startup, shutdown and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard."*

Therefore, the Startup, Shutdown and Malfunction Plan must address all process, particulate emission control equipment and monitoring equipment used to comply with the standard.

2.0 Operation and Maintenance Plans

2.1 Scope

The following particulate emission capture systems and particulate emission control devices are covered by this plan:

- Particulate emission capture systems
  - No. 14 Blast Furnace Casthouse Baghouse hoods, dampers, ductwork, and fans
- Particulate emission control devices
  - No. 14 Blast Furnace Casthouse Baghouse (bag leak detection system only)

2.1.1 The purpose of this plan is to ensure that the above are operated and maintained in a manner consistent with good air pollution control practices. (63.7800(a))

2.1.2 Definitions

2.1.2.1 Capture systems includes the hood, dampers, ductwork, and fans.

2.2 Plan Elements

2.2.1 Equipment inspection of capture systems for No. 14 Blast Furnace Casthouse Baghouse (63.7800(b)(1))

Equipment	Inspecting Frequency	Inspecting Department	Recording Method	Regulatory Citation
Ductwork (external)	Monthly	Maintenance	Title V System	63.7800(b)(1)
Hoods	Monthly	Maintenance	Title V System	63.7800(b)(1)
Pressure Sensors	Monthly	Maintenance	Title V System	63.7800(b)(1)
Dampers and Damper Switches	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fans Exterior Integrity	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fans Bearings and Couplings	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fan Motors Bearings	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fan Housing and Seals	Monthly	Maintenance	Title V System	63.7800(b)(1)

2.2.3.1 Bag leak detectors are installed on the No. 14 Blast Furnace Casthouse Baghouse.

Bag Leak Detector Alarm Response	Response Action	Corrective Action (CA) Responsibilities	Recording Method	Regulatory Citation
Within 1 hour	Initiate CA to determine the cause of the alarm.	Maintenance	Title V System	63.7800(b)(4)
Within 24 hours	Initiate CA to correct the cause of the problem.	Maintenance	Title V System	63.7800(b)(4)
As soon as practicable	Complete CA.	Maintenance	TitleV System	63.7800(b)(4)

2.2.4 Inspections specific to baghouses (63.7830(b)(4)(i)-(viii))

Baghouse Equipment	Inspection Frequency	Inspection Task	Recording Method	Regulatory Citation
Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.	Daily	Maintenance	Title V System	63.7830(b)(1)
Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.	Weekly	Maintenance	Title V System	63.7830(b)(2)
Check the compressed air supply for pulse-jet baghouses.	Daily	Maintenance	Title V System	63.7830(b)(3)

United States Steel Corporation
Gary Works

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40 CFR 63 Subpart FFFFF
National Emission Standards for Hazardous Air Pollutants
For Integrated Iron and Steel Manufacturing Facilities

- **Operation and Maintenance Plan**

Applicable to the following:

- **Processes:**
  - **No. 1 BOP Daisy BOP Vessel**
  - **No. 1 BOP Evelyn BOP Vessel**
  - **No. 1 BOP Mary BOP Vessel**

- **Capture Systems:**
  - **No. 1 BOP Daisy BOP Vessel hoods, dampers, ductwork, and fans common to North and South Gas Cleaners (Venturi Scrubbers)**
  - **No. 1 BOP Evelyn BOP Vessel hoods, dampers, ductwork, and fans common to North and South Gas Cleaners (Venturi Scrubbers)**
  - **No. 1 BOP Mary BOP Vessel hoods, dampers, ductwork, and fans common to North and South Gas Cleaners (Venturi Scrubbers)**

- **Control Equipment:**
  - **BOP Vessels North Gas Cleaner (Venturi Scrubber)**
  - **BOP Vessels South Gas Cleaner (Venturi Scrubber)**
  - **Reladle and Hot Metal Desulfurization Baghouse (bag leak detection system only)**
  - **CAS-OB Baghouse (bag leak detection system only)**

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1.0 Introduction

1.1 Background

National Emissions Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing were promulgated under 40 CFR 63 Subpart FFFFF on May 20, 2003. The standards specify the following as affected facilities under 40 CFR 63 Subpart FFFFF:

- sinter plants
- blast furnaces
- basic oxygen process furnaces (BOPF)

The standards address emissions from each of the following emission sources:

- Sinter plant windbox exhaust
- Sinter plant discharge end
- Blast furnace casthouse
- Basic oxygen process furnace (BOPF)
- BOPF shop hot metal transfer
- BOPF shop hot metal desulfurization
- BOPF shop hot metal slag skimming
- BOPF shop ladle metallurgy

1.2 Purpose

These standards require that certain plans be developed and implemented by May 22, 2006. The purpose of this document is to comply with the requirements of 40 CFR 63 Subparts A and FFFFF to develop and implement the following plans:

- Operation and maintenance plan
- Site-specific monitoring plan
- Startup, shutdown and malfunction plan

1.3 Applicability

1.3(a) Operation and Maintenance Plan

40 CFR 63.7800 requires that a written Operation and Maintenance plan be developed and implemented for the following particulate emission capture systems* and particulate emission control devices specified in 40 CFR 63.7790(b):

- Sinter plant discharge end particulate emission capture systems

The Startup, Shutdown and Malfunction Plan is not included in this document. It is included in a separate document.

Dampers and Damper Switches	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fans Exterior Integrity	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fans Bearings and Couplings	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fan Motors Bearings	Monthly	Maintenance	Title V System	63.7800(b)(1)
Fan Housing and Seals	Monthly	Maintenance	Title V System	63.7800(b)(1)

2.2.1.1 All deficiencies found during inspections listed in the above table such as holes, corrosion, deformation, broken drive shafts or other conditions affecting performance will be recorded on existing inspection forms. Corrective action will be completed before the next scheduled inspection.

2.2.2 Preventative Maintenance for the North and South Gas Cleaners (63.7800(b)(2))

2.2.2.1 Refer to current scrubber inspection frequency in the Continuous Compliance Plan (CCP) for the scrubbers.

2.2.2.2 The preventative maintenance schedule is consistent with the manufacturer's instructions for routine or long term maintenance.

2.2.3 Corrective action (CA) procedures for venturi scrubbers (Gas Cleaners) (63.7800(b)(5) & 63.7833(g))

Hourly Average Pressure Drop or Water Flow Rate Alarm Response	**Response Action**	**Corrective Action (CA) Responsibilities**	**Recording Method**	**Regulatory Citation**
Within 1 hour	Initiate CA to determine the cause of the alarm.	Maintenance	Title V System	64.7800(b)(5) & 63.7833(g)
Within 24 hours	Measure and record the hourly average to determine if CA successful.	Maintenance	Title V System	64.7800(b)(5) & 63.7833(g)
Within 48 hours (if first CA not	Measure and record the hourly	Maintenance	Title V System	64.7800(b)(5) & 63.7833(g)

Monitor cleaning cycles to ensure proper operation using an appropriate methodology.	Daily	Maintenance	Title V System	63.7830(b)(4)
Check bag cleaning mechanisms for proper functioning using an appropriate methodology.	Monthly	Maintenance	Title V System	63.7830(b)(5)
Confirm the physical integrity of the baghouse through visual inspections of the baghouse interior for air leaks.	Quarterly	Maintenance	Title V System	63.7830(b)(7)
Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors or equivalent means.	Quarterly	Maintenance	Title V System	63.7830(b)(8)

3.0 Plan Maintenance, Recordkeeping and Reporting

3.1 Initial plan requirements

- The Operation and Maintenance Plan must be developed and implemented by May 22, 2006.
- Failure to meet any condition in a plan is a deviation and must be reported as such in your periodic deviation report.

3.2 Plan revisions

- The O & M Plan may be revised at any time without permitting agency notification.

3.3 Recordkeeping

- You must keep all current plans, superceded plans and all information necessary to demonstrate that you have complied with each plan requirement on-site for a period of at least 5 years. The first three years the information must be kept on-site and the last two years the information can be stored off-site.

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Appendices

Table 4.0-1B: U.S. Steel – Gary Works, Continuous Compliance Plan (CCP) for No. 2 QBOP Shop Operations, Inspection Program for Secondary Emissions Baghouse

Table 4.0-2: U.S. Steel – Gary Works, Continuous Compliance Plan (CCP) for No. 2 QBOP Shop Operations, Inspection Program for Gas Cleaning System Scrubbers (East and West)

- Blast furnace casthouse particulate emission capture systems
- BOPF secondary particulate emission capture systems
- BOPF venturi scrubber primary particulate emission control systems
- BOPF electrostatic precipitator primary particulate emission control systems

* For purposes of this plan, "emission capture system" includes emission capture hoods, ductwork, dampers and fans important to the efficient collection and transport of particulate emissions to a particulate emission control device. The particulate emission control device is not part of the particulate emission capture system.

The Operations and Maintenance Plan for the No. 2 QBOP capture systems and control equipment is included in this document.

1.3(b) Site-Specific Monitoring Plan

40 CFR 63.7831(a) requires that a Site-Specific Monitoring Plan be developed and implemented for each Continuous Parametric Monitoring System (CPMS) required in 40 CFR 63.7830. Therefore, each CPMS associated with each particulate emission capture system and each particulate emission control device required to have an Operation and Maintenance Plan, listed in 1.3(a) above, is also required to have a Site-Specific Monitoring Plan.

The Site-Specific Monitoring Plan is not included in this document. It is included in a separate document.

1.3(c) Startup, Shutdown and Malfunction Plans

40 CFR 63.7810(c) requires that a written Startup, Shutdown and Malfunction Plan be developed and implemented according to the requirements of 40 CFR 63.6(e)(3), which states in part:

> *"...The owner or operator of an affected source must develop and implement a written startup, shutdown and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard."*

Therefore, the Startup, Shutdown and Malfunction Plan must address all process, particulate emission control equipment and monitoring equipment used to comply with the standard.

2.0 Operation and Maintenance Plans

2.1 Scope

The following particulate emission capture systems and particulate emission control devices are covered by this plan:

- Particulate emission capture systems
  - No. 2 QBOP "T" QBOP Vessel hoods, dampers, ductwork, and fans common to East and West Gas Cleaners (Venturi Scrubbers)
  - No. 2 QBOP "W" QBOP Vessel hoods, dampers, ductwork, and fans common to East and West Gas Cleaners (Venturi Scrubbers)
  - No. 2 QBOP "Y" QBOP Vessel hoods, dampers, ductwork, and fans common to East and West Gas Cleaners (Venturi Scrubbers)
  - SEC Baghouse hoods, dampers, ductwork, and fans

- Particulate emission control devices
  - QBOP Vessels East Gas Cleaner (Venturi Scrubber)
  - QBOP Vessels West Gas Cleaner (Venturi Scrubber)
  - SEC Baghouse (bag leak detection system only)
  - Mixer Desulfurization Baghouse (bag leak detection system only)
  - No. 1 LMF Baghouse (bag leak detection system only)
  - No. 2 LMF Baghouse (bag leak detection system only)
  - RH Degasser Baghouse (bag leak detection system only)

2.1.1 The purpose of this plan is to ensure that the above are operated and maintained in a manner consistent with good air pollution control practices. (63.7800(a))

2.1.2 Definitions

2.1.2.1 Capture systems includes the hood, ductwork, and fans.

2.1.2.2 Control devices consist of the scrubber components (venturi sections).

2.2 Plan Elements

2.2.1 Equipment inspection of capture systems for the East and West Gas Cleaners (63.7800(b)(1))

Equipment	Inspecting Frequency	Inspecting Department	Recording Method	Regulatory Citation
Ductwork	Monthly	Maintenance	Title V	63.7800(b)(1)

will be recorded on existing inspection forms. Corrective action will be completed before the next scheduled inspection.

2.2.3 Preventative Maintenance for the East and West Gas Cleaners (63.7800(b)(2))

2.2.3.1 Refer to current scrubber inspection frequency in the Continuous Compliance Plan (CCP) for the scrubbers.

2.2.3.2 The preventative maintenance schedule is consistent with the manufacturer's instructions for routine or long term maintenance.

2.2.4 Operating Limits for the SEC Baghouse (63.7800(b)(3))

Operating Parameter	Why Chosen	Recording Method	Averaging Frequency	Regulatory Citation
Fan amps	Current equipment	Continuous	Hourly average	63.7800(b)(3)
Damper positions	Current equipment	Continuous	N/A	63.7800(b)(3)

2.2.4.1 Fugitive particulate emissions generated from scrap charging, hot metal charging, tapping, and deskulling are captured and conveyed to the SEC Baghouse.

2.2.4.2 Description of capture system design will be maintained in the Title V System. (63.7800(b)(3)(iii))

2.2.4.3 Description of the capture system operating during production will be maintained in the Title V System. (63.7800(b)(3)(iii))

2.2.4.4 The rationale for why the operating parameter was chosen is because it is currently being measured. (63.7800(b)(3)(iii))

2.2.4.5 Description of each selected operating limit parameter will be maintained in the Title V System. (63.7800(b)(3)(iii))

2.2.4.6 Description of method used to monitor parameter will be maintained in the Title V System. (63.7800(b)(3)(iii))

2.2.4.7 Data used to set the value or settings for the parameter for each process configuration will be maintained in the Title V System. (63.7800(b)(3)(iii))

2.2.5 Corrective action (CA) procedures for venturi scrubbers (East and West Gas Cleaners) (63.7800(b)(5) & 63.7833(g))

Hourly Average	Response Action	Corrective	Recording	Regulatory

Baghouse Equipment	Inspection Frequency	Inspection Task	Recording Method	Regulatory Citation
Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.	Daily	Maintenance	Title V System	63.7830(b)(1)
Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.	Weekly	Maintenance	Title V System	63.7830(b)(2)
Check the compressed air supply for pulse-jet baghouses.	Daily	Maintenance	Title V System	63.7830(b)(3)
Monitor cleaning cycles to ensure proper operation using an appropriate methodology.	Daily	Maintenance	Title V System	63.7830(b)(4)
Check bag cleaning mechanisms for proper functioning using an appropriate methodology.	Monthly	Maintenance	Title V System	63.7830(b)(5)
Confirm the physical integrity of the baghouse through visual inspections of the baghouse interior for air leaks.	Quarterly	Maintenance	Title V System	63.7830(b)(7)
Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors or equivalent means.	Quarterly	Maintenance	Title V System	63.7830(b)(8)

3.0 Plan Maintenance, Recordkeeping and Reporting

3.1 Initial plan requirements